

Before the  
Federal Communications Commission  
Washington, D.C. 20554

In the Matter of	}	
	}	
Revision of Part 15 of the Commission's	}	
Rules Regarding Ultra-Wideband	}	ET Docket No. 98-153
Transmission Systems	}	

Reply Comments of Multispectral Solutions, Inc.

Multispectral Solutions, Inc. (MSSI) wishes to respond to three recent submissions (dated 23, 25 and 28 January 2002) from XtremeSpectrum, Inc. ("Xtreme") in the above referenced proceeding.

23 January 2002 Xtreme Submission

Xtreme makes the statement that "the miniscule levels of UWB emissions levels – well under a billionth of a watt, in the GPS band – extend over a few tens of centimeters at most, and are completely safe for E911."

First of all, while "a billionth of a watt" certainly *sounds* like a tiny, miniscule amount of power to the average, non technical person; this power level (-90 dBW or -60 dBm) is 90 dB, or a *billion times larger* than the signal that a GPS receiver must be able to detect to function in an E911 application (cf. Tendler Cellular submission dated 25 January 2002).

Secondly, Xtreme's belief that such signals "extend over a few tens of centimeters at most" appears to be based upon the limitations inherent in Xtreme's own receiver technology, rather than upon the performance of commercial grade GPS receivers (cf. *ex parte* submission of Qualcomm, Inc. dated 11 January 2002).

25 January 2002 Xtreme Submission

Xtreme alleges that the "NTIA recommendations (as reported in the press) appear to be unworkable for *all* UWB communications companies, judging from their public filings" (*italics* in original document). They further state that "a ban on peer-to-peer operation ... will make it impossible for any UWB communications company to go forward."

That these statements are without basis in fact is obvious from the numerous license agreements for other than peer-to-peer communications applications reported by UWB company Time Domain Corporation. As aptly pointed out by Time Domain, Aetherwire, PulseLink, MSSI and other UWB companies, this technology has significant commercial advantages in not only communications (and also for other than peer-to-peer use), but also in precision localization and short range radar applications.

Xtreme continues to sound the alarm that "[p]rompt action is essential," pointing out that "one UWB company has folded, unable to wait out the delays; and other are certain to follow..." It

should be pointed out that any business model which relies upon obtaining substantive regulatory changes and approvals, affecting potentially millions of people, would appear to have a significant level of risk. In addition, any business strategy which proceeds to develop a chip or device for which such regulatory approval has not yet been obtained, further compounds that level of risk. As the U.S. has painfully learned from the failed “dot com” era, simply having a “good idea” is not necessarily a one-way ticket to success, nor a guarantee that timing, level of capitalization and other factors are adequate to prevent a company from simply going out of business.

MSSI once again commends the Commission on its highly professional handling of this proceeding, and looks forward to a Report and Order which enables ultra wideband technology, while adequately protecting the interests of those parties who currently utilize existing spectrum.

#### 28 January 2002 Xtreme Submission

Attached to Xtreme’s 28 January submission was a press release entitled “XtremeSpectrum Supports DoD Position for Ultra-Wideband Emissions” and which outlined what Xtreme stated was their “‘win-win’ solution for industry, government and public.”

Unfortunately, Xtreme has completely misinterpreted the FCC’s definition of UWB bandwidth occupancy (as determined by the -10 dB points on the power spectrum) as sufficient to meet DoD requirements for out-of-band emissions (OOBE) into restricted bands below 4.2 GHz. That this interpretation is erroneous is obvious from the multitude of filings from potentially affected parties in this proceeding.

Furthermore, based upon this erroneous interpretation, Xtreme then proceeds to state that its plan for “lower power emissions in restricted bands eliminates any need for a ban on communications between two battery-operated devices – so called ‘peer-to-peer’ communications.” Following as it does from an incorrect understanding of the effects of OOBE, it is not surprising that Xtreme has reached a conclusion which is insupportable in light of all UWB measurement test results completed to date.

Xtreme goes on to state that “[w]ireless peer-to-peer communication is the commercial driver for the entire UWB industry.” While this may indeed be the “commercial driver” for Xtreme’s own business model, the commercial interest in UWB extends far beyond Xtreme’s limited view of the technology (see comments to 25 January submission above).

Finally, Xtreme stated that “U.S. commercialization of the technology would lower cost and drive innovation forward, facilitating the incorporation of ultra-wideband technology into defense systems that would aid each soldier, sailor, Marine and airman.” While it is certainly true that the military continues to benefit from commercial-off-the-shelf (COTS) technologies, it is not as obvious that Xtreme’s concept for peer-to-peer UWB communications systems having 10 feet of range is of either tactical or strategic importance to the military. Furthermore, a UWB communications chipset designed for such extremely limited range is, most likely, not an item that would be incorporated into military systems used in “foliage penetrating radar, through-wall surveillance radar for urban warfare, advanced mine countermeasure systems, lightweight

personnel detection devices, and communication systems for advanced Unmanned Aerial Vehicles” as alluded to by Xtreme in its submission.

Respectfully submitted,

A handwritten signature in dark ink, reading "Robert J. Fontana". The signature is written in a cursive style with a horizontal line underneath it.

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